

REMARKS

This is in response to the Office Action dated October 5, 2005. Claims 1-29 are pending.

Applicant notes with appreciation the Examiner's allowance of claims 3, 7, 11, 15, 16, 19, 20, 21, 23, 24, 25, 27 and 28; and the Examiner's indication that claims 4, 8, 12, 22 and 26 contain allowable subject matter.

Claim 1 stands rejected under Section 103(a) as being allegedly unpatentable over Terui in view of Gnadinger. This Section 103(a) rejection is respectfully traversed for at least the following reasons.

Claim 1 requires that "*said first through electrode and said second through electrode have mutually differing cross-sectional areas in a common horizontal plane transverse to a through-hole direction.*" For example, different through electrodes (e.g., 8a and 8c) in Figs. 1-2 of the instant application have different cross sectional areas in a common horizontal plane transverse to the through-hole direction. By adopting a through electrode of larger cross-sectional area in a common horizontal plane for an electrode that is to pass a greater amount of current, for example and without limitation, it is possible to reduce resistance of the through electrode thereby suppressing heat generation, signal delay, and/or the like. The cited art fails to disclose or suggest the above quoted feature of claim 1.

The Office Action's alleged modification to Terui based on Gnadinger is incorrect for at least the following reasons. Terui, in Fig. 5B, requires that electrodes 181, 183, 285 and 287 be connected to electrodes 81-87 at a *peripheral* portion of substrate 10 via wirings 90. Clearly, electrodes 181, 183, 285 and 287 of Terui are *not* through electrodes as required by claim 1. Moreover, wirings 90 are needed in Terui so that the electrodes 181, 183, 285 and 287 can be

electrically connected to the electrodes 81-87. Recognizing that Terui fails to disclose or suggest the “through electrodes” required by claim 1, the Office Action cites to Gnadinger.

However, given that electrodes 181, 183, 285 and 287 in Terui must be connected to electrodes 81-87 at a peripheral portion of substrate 10 via external wirings 90, one of ordinary skill in the art would never have modified Terui as alleged in the Office action to make electrodes 181, 183, 285 and 287 through electrodes as called for in claim 1. There is simply no suggestion or motivation in the art for doing this. If flat planar electrodes 181, 183, 285 and 287 in Fig. 5 of Terui were modified to be through electrodes, their bottom ends would be buried in insulator 70 in Fig. 5B of Terui and no electrical connection could be made to electrodes 81-87, thereby destroying the functionality and purpose of Terui’s device. Thus, the alleged modification would destroy the functionality of the base reference. Accordingly, all Section 103(a) rejections based on this combination of Terui and Gnadinger are flawed for at least this reason.

The Section 103(a) rejection of claims 13, 14 and 29 are flawed for the reasons discussed above. In particular, the alleged modification to Terui is fundamentally flawed and would never have been done because the functionality of the base reference would be destroyed.

It is respectfully requested that all rejections be withdrawn. All claims are in condition for allowance. If any minor matter remains to be resolved, the Examiner is invited to telephone the undersigned with regard to the same.

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Respectfully submitted,

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